



The Chemical Company

Helping Make  
Products Better™

December 4, 2007

Federal Express  
7924 6548 4686

RCAP-RECEIVED

DEC 05 2007

Mr. Kenneth Herstowski  
Environmental Protection Agency, Region VII  
901 N. Fifth St.  
Kansas City, Kansas 66101

Reference: e-mail Ms. Darleen Groner, MoDNR HWP, to Curt Gardner, BASF Corporation, dated 10/30/2007, Subject: "DRAFT BASF Sale"

Dear Mr. Herstowski:

As directed in the referenced e-mail (Attachment 1), this correspondence addresses submittal of the Feedstream Analysis Plan required under 40 CFR 63 Subpart EEE (Hazardous Waste Combustor NESHAP) for the BASF Corporation Hannibal Facility. This submittal was requested because the site's "D" Hazardous Waste and Fume Incinerator is to be classified as a commercial incinerator as a consequence of the sale by BASF of a production unit to another company, American Vanguard Company ("AMVAC"). The affected production unit is the terbufos/phorate insecticides manufacturing unit, which uses "D" incinerator to treat process fumes and hazardous liquid wastes. The terbufos/phorate facility will continue to produce these products, and continue to send its process fumes and hazardous liquid wastes to "D" Incinerator for treatment, after the facility sale to AMVAC.

Attachment 2 is the Feedstream Analysis Plan currently in effect for the BASF Hannibal Facility's Hazardous Waste Combustors. BASF Corporation sees no need to amend the Feedstream Analysis Plan at this time as a consequence of the sale, for the following reasons:

Under the terms of the sale, BASF Corporation retains the right to review all raw materials used in the manufacture of terbufos, phorate or any new product AMVAC may introduce in the future for possible impact on waste composition or generation rates.

Under the terms of the sale, BASF personnel will be contracted to operate the terbufos/phorate facility and provide supervision of daily operations on behalf of AMVAC. BASF administrative policies, including Management of Change, will remain in effect for the terbufos/phorate facility. This provides BASF the opportunity to review any





The Chemical Company

Page 2

process change that may impact waste composition or generation rates before it is implemented.

In the event BASF determines that a proposed process change may impact waste or fume composition or generation rates, or in the event a new product is to be introduced into the AMVAC facility that will generate new wastes and fumes for incineration, BASF will conduct waste and fume characterization evaluations discussed in the FAP, just as it does for its own products. This will assure the wastes and fumes are managed by "D" Incinerator in compliance with Hazardous Waste Combustor NESHAP regulations.

Sincerely,

BASF Corporation  
Hannibal Site

A handwritten signature in blue ink, reading "Curt Gardner".

Curt Gardner, P.E.  
EHS Team Member

Cc: Ms. Nicole McGlone-Santistevan  
Ms. Irene Crawford, NERO, MoDNR  
Mr. Richard Nussbaum, HWP, MoDNR

# ATTACHMENT



"Darleen Groner"  
<darleen.groner  
@dnr.mo.gov>

10/30/2007 11:21  
AM

To curt.gardner@basf.com, john.perrin@basf.com

cc Shelley.Woods@ago.mo.gov, "Rich Nussbaum"  
<rich.nussbaum@dnr.mo.gov>, "Richard Hock"  
<richard.hock@dnr.mo.gov>, "Tom Judge"

bcc

Subject DRAFT BASF Sale

## History:

➡ This message has been forwarded.

Curt,

After reviewing your e-mail below, BASF shall submit a Class 1 permit modification request with prior director's approval as soon as possible to obtain commercial facility status prior to the purchase. The HWP, in coordination with EPA and the WPP, has been reviewing the wastewater exempt status of all tanks at the facility even prior to the potential sale. All tanks at the facility that hold hazardous waste shall be included with the Class 1 permit modification request to be permitted as a RCRA tank. Wastewater exemptions are to reduce dual permitting and these tanks are not covered in the water permit. A schedule to address submittal of the closure plan, inspection plan, upgrades if necessary, etc. for the tanks to bring them up to RCRA standards can be included.

-Waste Analysis Plan-BASF shall submit a WAP showing how you will determine that the waste you will be receiving from the new generator is what you are permitted to store/treat.

-BASF shall review all contingency plans and associated documents the approved permit application to determine if any other necessary modifications are required due to the sale.

-Please submit a copy of BASF's revised feed stream analysis plan.

-BASF and/or the new generator shall also contact the Water Protection Program and the Air Pollution Control Program to determine if a modification to those permits are necessary.

-Spill/releases-BASF shall outline in the Class 1 permit modification request how spills from the new generator will be reported/documented. The entire contiguous property is covered under corrective action.

-Please see the following link that will explain the fees and taxes for commercial facilities. You will be getting a letter requesting payment for inspections after the purchase takes place or after the modification is approved whichever comes first.

<http://www.sos.mo.gov/adrules/csr/current/10csr/10c25-12.pdf>

-The company purchasing the business will have to send us a complete Notification of Regulated Waste Activity form along with the \$100 initial registration fee so we can issue new EPA and MO ID numbers for the site. The form is online at: [www.dnr.mo.gov/moeforms/norwardirect.jsp](http://www.dnr.mo.gov/moeforms/norwardirect.jsp) It can be filled out on their computer, then saved if they want to do it that way. However, they can't send it to us electronically. They still have to print it out & send. We'll send them an acknowledgment letter with the ID #s. They should call David Green at 573/751-3204 to discuss the reporting. He can help them decide if they want to do the reporting electronically or on paper and how to do it electronically if they choose.

Based on how they decide to report, he can help them get the proper version of the report form. David can also explain things like the period

the reporting year covers, when reporting is due and what fees they may be subject to as a generator.

Please let us know if you would like to have a meeting to discuss any of the above items further. Thanks.

Darleen Groner, P.E.  
Hazardous Waste Program  
Permits Section  
573-751-3553  
darleen.groner@dnr.mo.gov

"Curt Gardner" <curt.gardner@basf.com>  
10/02/2007 02:16 PM

To  
"Darleen Groner" <darleen.groner@dnr.mo.gov>  
cc  
"John K Perrin" <john.perrin@basf.com>, "Robert W Leicht"  
<robert.leicht@basf.com>, "Dale E Webster" <dale.webster@basf.com>,  
"Nicole E McGlone-Santistevan" <nicole.mcglone-santistevan@basf.com>,  
"Greg J Devereux" <greg.devereux@basf.com>, "Laurie Stumpe"  
<laurie.stumpe@basf.com>  
Subject  
Re: BASF Sale

Regarding your requests for details on the possible sale of the Terbufos/Phorate facility assets to another company as it affects BASF "D" Incinerator commercial/non-commercial status, the following is my understanding of the pending arrangement:

The outside company will own the products and the physical assets of the Terbufos/Phorate production facility. BASF will retain ownership of the real estate beneath the facility.

BASF will retain ownership of the "D" Incinerator, and associated waste tanks, APC equipment, and effluent handling equipment. BASF operating personnel, supervision and management will be responsible for running the "D" Incinerator waste treatment facility as they are today.

BASF personnel will supervise and operate the Terbufos/Phorate production facility for the outside company. I would also expect some additional plant services will be provided by BASF, but I have no details on that. The outside company has the option to replace BASF operations personnel with their own, but BASF does not anticipate the outside company will exercise that option any time soon.

The outside company may (or may not) locate its own management and/or technical personnel on site to oversee operation of the Terbufos/Phorate facility.



The outside company may elect in the future to introduce additional products for manufacture in the Terbufos/Phorate facility. However, we have no details or definite indication at this time that the outside company will do that. Any liquid and gaseous wastes from such future processes they may introduce they presumably will want to send to "D" Incinerator for treatment, if possible. Contractually, the outside company would be obligated to notify BASF of any new products they plan to make in the Terbufos/Phorate facility. This notification would be timely enough to allow BASF to assess any impact of the new product wastes on the incinerator's ability to remain compliant with regulatory permits, and to process any permit modifications that might be needed.

The Terbufos/Phorate process waste lines will remain piped directly to the "D" Incinerator waste treatment area as they are today. The boundary between what the outside company owns and what BASF owns will likely be where their waste lines from the Terbufos/Phorate process connect to our waste tanks (which feed the incinerators). (If location of this boundary becomes a key issue in determining commercial v.s. non-commercial status of the incinerator, please advise).

The "D" Incinerator treatment facility will continue to receive wastes from other BASF production units on site, in addition to the Terbufos/Phorate wastes. The wastes will commingle and mix in the waste tanks before feeding the incinerator. This remains unchanged from the current situation.

If the sale of the Terbufos/Phorate assets proceeds, it could happen anytime from now until the end of the year.

Regarding the other issues you raised, please see my responses below:

My understanding is that in the event of a spill from the Terbufos/Phorate facility owned by another company, the MoDNR expects the spill will be managed and reported in compliance with the Corrective Action section of BASF's RCRA Part B Permit. While I do not disagree with the MoDNR's expectation on this point, I will need to see how this concern is addressed in any contractual arrangements BASF has with the outside company.

My understanding is the MoDNR is researching if receiving wastes at our "D" incinerator from an outside company's facility (namely the Terbufos/Phorate facility) may void the Wastewater Exemption from RCRA we currently have for the "D" Incinerator waste tanks. Regarding this issue, please refer to 53 FR 34079 of 9/2/88 Hazardous Waste Management System; Standards for Hazardous Waste Storage and Treatment Tank Systems

. Under section II.A.2. (Clarification of "Wastewater Treatment Unit"), it states:

"The applicability of the exemption does not depend on whether the wastewater is piped or trucked, or conveyed in any other manner to the wastewater treatment facility within the boundaries of the facility generating the wastewater. Likewise, the applicability of the exemption does not depend on whether the on-site wastewater treatment facility also treats wastewater generated off-site."

Based on this FR statement, and barring the MoDNR finding any subsequent regulatory language to the contrary, BASF believes the pending sale of the Terbufos/Phorate facility should not change the Wastewater Exemption status of the "D" Incinerator waste tanks. The composition of the waste from Terbufos/Phorate production remains the same. Only the ownership of the assets producing the waste changes.

Curt Gardner, P.E.  
Team Member, EHS Central Hub  
BASF Corporation  
3150 Highway JJ  
Palmyra, MO. 63461-2611  
Ph: 573-769-8684  
Fax: 573-769-5609  
curt.gardner@basf.com

"Darl  
een  
Grone

To

r"  
<darl

curt.gardner@basf.com

cc

een.g  
roner

Subject

@dnr.  
mo.go  
v>

Re: BASF Sale

10/01  
/2007  
04:12  
PM

Please tell us, in specific, what is going to happen and we need to know the details of agreements. Who owns what, who operates what, what are the business relationships, etc. We need the details of the transaction.

Thanks.

Darleen Groner, P.E.  
Hazardous Waste Program  
Permits Section  
573-751-3553  
darleen.groner@dnr.mo.gov

Darleen Groner/HWP/DEQ/MODNR  
10/01/2007 02:50 PM

To

Curt Gardner  
cc

Subject  
BASF Sale

Curt,

I received your phone message. I would like to set up an internal meeting to discuss your potential sale. Can you please send an updated summary of the scenario and date the event will occur and we can get back to you with the appropriate response.

Thanks.

Darleen Groner, P.E.  
Hazardous Waste Program  
Permits Section  
573-751-3553  
darleen.groner@dnr.mo.gov

(See attached file: C.htm) [attachment "C.htm" deleted by Darleen Groner/HWP/DEQ/MODNR]



- C.htm

# **BASF Corporation Hannibal (Palmyra) Plant Incineration Waste Feedstream Analysis Plan**

## **1.0 Introduction**

Facility Name:

BASF Corporation

Facility/Mailing Address:

3150 Highway JJ

Palmyra, MO 63461-2611

Contact Person:

Mr. Curt Gardner

Team Member, Ecology, Health and Safety

Phone: 573-769-8684

EPA ID#:

MOD 050 226 075

This document is the Feedstream Analysis Plan for the Hannibal site required by 40 CFR 63.1209(c)(2) for Hazardous Waste Combustors. It supplements the site Waste Analysis Plan required for compliance with 40 CFR 264, 40 CFR 270, and 10 CSR 25-7.264.

The BASF Corporation Palmyra (Hannibal) plant manufactures agricultural and other chemicals in various production facilities. Organic liquid, aqueous liquid, and some fume wastes generated by these manufacturing processes are destroyed in four on-site, hazardous waste incinerators. Three of these incinerators, identified as "A", "B", and "C" Incinerators, associated liquid waste storage and feed systems, and fume feed system are located in a site area called "North Incineration". "A" and "B" Incinerators are John Zink units, and "C" Incinerator is a T-Thermal unit. The fourth, "D" Incinerator and its associated liquid waste storage and feed systems and fume feed system, are located at a site area called "South Incineration". "D" Incinerator is a Trane unit. All four incinerators are continuously fed, rapid quench units, and are each equipped with high-energy scrubbers for flue gas treatment. "D" incinerator also has a low energy scrubber for acid gas control. Some of the streams these units treat are hazardous waste, so they are regulated under the Hazardous Waste Combustor Maximum Achievable Control Technology (HWC MACT) regulation.

## **2.0 Feedstream Description**

### A. North Incineration Liquid Waste and Fume Feeds

North incineration routinely receives wastes from the Pyrrole/MMPDC/Metaflumizone, Pendimethalin (PROWL®), IMI-1, IMI-2/Diacids, and CPP (formulation/packaging) facilities.



# **BASF Corporation Hannibal (Palmyra) Plant**

## **Incineration Waste Feedstream Analysis Plan**

Hazardous organic wastes from Pyrrole/MMPDC/Metaflumizone and non-hazardous organic waste from Pendimethalin are segregated and stored in dedicated organic waste tanks. These organic wastes provide fuel value. They are combined in-line, feeding the burner(s) at each incinerator, along with auxiliary natural gas fuel.

Hazardous aqueous wastes from Pyrrole/MMPDC/Metaflumizone, Pendimethalin /CPP, IMI-1/IMI-2/Diacids processes are typically stored in separate waste storage tanks. They are subsequently blended prior to incineration in two, parallel-operated Waste Blend Tanks. The blended aqueous waste from the blend tanks is fed to each incinerator via aqueous waste feed nozzles.

Process fumes from Pendimethalin and waste storage tank vent fumes are fed via separate fume feed systems to each incinerator. Highly air-diluted fumes from the two IMI facilities are also fed to each incinerator. These streams are not routinely analyzed. They contain mostly nitrogen and/or air, some acid fumes, and some organics (VOC's and HAP's). Historical analytical information or engineering estimates are used to determine the amount of regulated constituents in the fumes, specifically organic chlorine from volatile chlorinated organics. This is added to the organic chlorine total feeding each incinerator if these gas streams are being fed to the incinerator. Other regulated constituents (ash and metals) are considered to be present in negligible concentrations.

### **B. South Incineration Liquid Waste and Fume Feeds**

South Incineration routinely receives combined hazardous organic and aqueous wastes from the Phorate/Terbufos (formerly THIMET®/COUNTER®), IMI-1 and IMI-2/Diacid facilities in one of two aqueous waste tanks. Hazardous organic waste is periodically decanted from the combined aqueous/organic wastes stored in the receiving aqueous waste tank, and transferred to an organic waste storage tank. It is subsequently fed as a fuel source to the D incinerator burner, along with auxiliary natural gas fuel. Hazardous aqueous waste is fed to the incinerator via aqueous waste feed nozzles.

Process fumes from Phorate/Terbufos and waste storage tank vents are combined and fed via a fume feed system to D Incinerator. The fumes are mostly nitrogen but contain trace organics (e.g., VOC's and HAP's) and periodically will have high (>80%) hydrogen sulfide content. This fume stream is not routinely analyzed. Historic analytical information or engineering estimates may be used to determine the amount of regulated constituents in the fumes, specifically any organic chlorine from volatile chlorinated organics. If any organic chlorine is determined to be



# **BASF Corporation Hannibal (Palmyra) Plant**

## **Incineration Waste Feedstream Analysis Plan**

present in the fumes, the amount is added to the organic chlorine total feeding the incinerator whenever this gas stream is being fed to the incinerator.

### **C. Other Incinerator Feeds**

All four incinerators use combustion and atomizing air, atomizing steam, and natural gas as an auxiliary fuel supplementing organic waste. Well water and clarified water are also used for quenching. Regulated HWC MACT constituent concentrations in these streams are considered negligible compared to other feeds and are not routinely measured.

Some non-hazardous organic wastes generated by other BASF sites may occasionally be treated in the site incinerators as availability and capacity permit.

### **3.0 Feedstream Analysis Parameters**

All liquid wastes (organic and aqueous) are periodically sampled and analyzed for HWC MACT regulated constituent concentrations (chlorine, ash, expanded LV Metals, expanded SV metals, mercury) and other analytes of interest. Currently, the site incinerators are regulated for organic chlorine, instead of total chlorine, because of previous data-in-lieu-of-testing reporting organic chlorine that was acceptable to the MDNR.

A summary of waste feeds and approximate compositions based on historic analyses and engineering estimates can be found under Feed Stream Tables.doc (Tables 1-1 to 1-16).

Additionally, the liquid waste and fume compositions actively used for HWC MACT compliance in the Incineration CMS are summarized in Waste Feed Computations-(*latest revision date*).xls.

### **4.0 Compliance Method**

Samples for HWC MACT waste characterization are typically taken at each incineration area waste storage tank receiving waste from one or more manufacturing processes, which in turn feed the incinerators, either directly or via the Waste Blend tanks. A liquid waste may also be sampled at an appropriate location (e.g. an aqueous or organic hold tank) in the source facility producing the waste, before it is transferred to the incineration area. These samples are taken to the plantsite laboratory for disposition. This typically involves preparing and shipping some of the samples for offsite contract lab analysis and also preparing samples for onsite lab analyses. Sampling and analytical methods are discussed in more detail below.

Waste sample analytical results for regulated constituents, generated and reported by an offsite contract laboratory, are received by the plantsite laboratory. The plantsite lab reviews the

## **BASF Corporation Hannibal (Palmyra) Plant**

### **Incineration Waste Feedstream Analysis Plan**

reported results for completeness. The results are then typically posted in a plantsite online file named (year)-wastefeed\_(contract lab name).xls. The lab notifies via e-mail appropriate Operations and EHS personnel of the new lab results so they can evaluate the posted results against historic database values and applicable process knowledge. Any questions about the results are promptly sent to the plantsite lab for clarification with the offsite contract lab doing the analytical work. Any laboratory analyses generated by the plantsite lab that might be HWC MACT related are also included in the online file.

The statistical evaluation database for each HWCMACT regulated constituent concentration (ash, total and organic Cl, expanded SV metals, expanded LV metals and mercury) in each sampled liquid waste will be updated as needed based on new analytical results. This database is a plantsite online file named Waste Analyses-Summary and Statistics.xls. If the statistical evaluation indicates there is a need to change any waste concentration data used for compliance, an updated Waste Feed Computations-(latest revision date).xls will be generated with the new waste concentration data. Following review and acceptance by EHS and Operations of the updated waste concentration data, Operations will enter any new waste concentration data into each incinerator control system as needed as a stored value. This control system stored value is the working concentration for feedrate control of the regulated constituent to the incinerator.

Each regulated constituent concentration in a liquid waste feed is multiplied by the mass feed rate (measured by a CMS device) of that liquid waste to the incinerator to derive the constituent mass feed rate from that particular waste feed. Where a single incinerator waste feed stream is a blend of several wastes, each having its own specific constituent concentration data (i.e. aqueous wastes feeding into a Waste Blend Tank at north incineration), the incinerator mass rate of each constituent in the blended waste will be calculated by the control system as follows:

$$\text{Constituent mass feedrate to incinerator} = [\text{mass feedrate of blended waste to incinerator}] * [\Sigma_i(\text{WBT waste feedrate}_i * \text{constituent concentration}_i) / \Sigma_i(\text{WBT waste feedrate}_i)].$$

Where:            i = Individual waste stream feeding into the waste blend tank.  
                      WBT = Waste Blend Tank for blending aqueous waste

The total regulated constituent mass feedrate to an incinerator is the sum of individual liquid waste stream constituent mass feedrates plus any calculated fume constituent mass rate (constituent mass concentration in fumes multiplied by the CMS-measured fume flowrate).

# **BASF Corporation Hannibal (Palmyra) Plant**

## **Incineration Waste Feedstream Analysis Plan**

Appropriate constituent feedrate rolling averages will be generated in the control system and continually compared to permit limits. Feed control algorithms or AWFCO will activate to reduce or shut-off one or more incinerator waste feed(s) if any regulated constituent mass feedrate approaches permit limits. This assures compliance with regulated constituent feedrate limits.

### **5.0 Analytical Methods**

BASF Corp at the Palmyra (Hannibal) facility typically uses both offsite contract laboratories and onsite BASF laboratories for HWC MACT-related waste analyses. The offsite labs typically employ standard waste characterization methods found in such widely recognized sources as EPA SW-846 and ASTM for determining regulated constituent concentrations. Analytical methods may change periodically to assure analyte accuracies for complex waste matrices are preserved. As a case in point, SVM and LVM analytical methods have required, and may continue to require, special developmental efforts by the contract laboratories specializing in these methods to achieve the very low minimum detection limits. These low MDL's are required to demonstrate compliance with the Alternative Metals Emission Standard used by the plant. Onsite methods (typically ash, chlorine and heating value) are based on established Quality Control methods used by the BASF laboratory. The methods are summarized in an on-site on-line documentation database called "Documentum".

The following analytical methods (some with modifications for the waste matrices) have been and/or are currently being employed for HWC MACT-regulated constituent analysis:

#### Semi-Volatile and Low-Volatility Metals

SW-846 Methods 3050B/6020 Acid Digestion of Sediments, Sludges, and Soils / Inductively Coupled Plasma-Mass Spectrometry

SW-846 Methods 3010A/6010B Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy / Inductively Coupled Plasma-Atomic Emission Spectrometry

SW-846 Method 7060A Arsenic (Atomic Adsorption, Furnace Technique)

SW-846 Method 7470A Mercury in Liquid Waste (Manual Cold-Vapor Technique)

SW-846 Method 7471A Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique)

#### Ash

ASTM D482 Standard Test Method for Ash from Petroleum Products

ASTM E830 Standard Test Method for Ash in the Analysis Sample of Refuse-Derived Fuel

INC-4 Ash Composition (BASF Site Method)

# **BASF Corporation Hannibal (Palmyra) Plant**

## **Incineration Waste Feedstream Analysis Plan**

### Chlorine

ASTM D808 Standard Test Method for Chlorine in New and Used Petroleum Products (Bomb Method)

ASTM E442 Test Method for Chlorine, Bromine, or Iodine in Organic Compounds by Oxygen Flask Combustion

ASTM E776 Standard Test Method for Forms of Chlorine in Refuse-Derived Fuel

SW-846 Method 5050 Bomb Preparation Method for Solid Waste

SW-846 Method 9056 Determination of Inorganic Anions by Ion Chromatography

EPA Method 300.0 Determination of Inorganic Anions by Ion Chromatography

KNOX WC-0016 Total Chlorine (STL Method)

INC-7 Determination of the Heat of Combustion of Materials by Oxygen Bomb Calorimetry (BASF Site Method)

ION-AN 1 Determination of Anions using Ion Chromatography (IC) with Conductivity Detector (CD) (BASF Site Method)

Note: The site-preferred method (based on results matching process knowledge) for determining organic chlorine content is to derive this from the difference between total chlorine analysis and inorganic chloride analysis.

### Viscosity

ASTM D445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)

### Density

ASTM D1475 Standard Test Method for Density of Liquid Coatings, Inks, and Related Products

### Heat Value (Not required for HWC MACT compliance)

ASTM D240 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter

ASTM E711 Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter

INC-7 Determination of the Heat of Combustion of Materials by Oxygen Bomb Calorimetry (BASF Site Method)

### Non-detection of Regulated Constituents

Non-detect SVM's, LVM's are treated as being present at one-half of the minimum detection limit (MDL) concentration (as allowed in the Alternative Metals Emission Standard). Non-

# **BASF Corporation Hannibal (Palmyra) Plant**

## **Incineration Waste Feedstream Analysis Plan**

detect mercury, ash, and total and organic chlorine are treated as being present at the reported detection limit concentration.

### **6.0 Sampling Methods**

Samples drawn from storage tanks or other waste sources feeding the incinerators are believed to be reasonably representative of what is in the tank or feed source. Wastes entering each waste storage tank are typically from a limited number of processes (to minimize regulated constituent variability). Some storage tanks use internal recirculation of tank contents to provide an additional measure of homogeneity to the waste. Sample(s) from each waste feed system are drawn by operating personnel into 8-ounce glass jars and sealed with corrosion resistant lids. The operating personnel taking the sample applies a label with serial number, time and date of sampling, and waste feed description, and also creates a sample analysis request document for each sample. These sampling procedures are detailed in the Standard Operating Procedures (on which the operating personnel have been trained), and assure representative samples are properly taken and identified. The samples and request forms are promptly transported to the plantsite laboratory for further disposition, following chain-of-custody procedure.

### **7.0 Sample Handling and Preservation**

Typically, the waste samples drawn for waste feed characterization that are received at the plantsite laboratory will be analyzed onsite for some constituents, and sent offsite to a contract laboratory for analysis of other constituents. They are stored inside a refrigerator until ready for packaging. Prior to offsite shipment, each sample is shaken to assure homogeneity. Then a sub-sample is drawn for packaging and shipping, using containers approved by the Department of Transportation for shipping hazardous materials. If more than one sample was taken at the same time from a particular waste, an approximately equal volume composite sub-sample may be taken. The remaining sample volume is retained at the plantsite lab in the original sample jars inside a refrigerator until analytical results are received, reviewed and accepted. If questions about analytical results arise, the retain material may be used for further analysis.

Retains of samples are also kept in the refrigerator, in case re-analysis of any sample is required. Retained waste samples no longer needed are returned to the incineration area for incineration, and the used sample jars are disposed of (not re-used) to avoid contamination concerns.

Chain-of-custody record keeping is employed throughout the sample handling process.

### **8.0 QA/QC Objectives and Procedures**



# **BASF Corporation Hannibal (Palmyra) Plant**

## **Incineration Waste Feedstream Analysis Plan**

QA/QC objectives and procedures related to waste feed sample handling at the site can be found in the site Standard Practice Instruction (SPI) HM 5-2, and Standard Operating Procedures of the operating areas. Off-site sample analyses are conducted by reputable Environmental labs that use SW-846, ASTM and other recognized methods and associated QA/QC procedures.

### **9.0 Frequency of Analysis**

Currently, each organic and aqueous waste feed is analyzed at least once a year, if that waste is generated and stored in that year. More frequent sampling and analyses may occur if there is expectation of a waste constituent concentration shift, or when new waste streams from new products are introduced. A major change in a process that could change one or more regulated constituent concentrations may also result in additional sampling and analyses to assure compliance. The need for such additional analytical work would be flagged through the site Management of Change procedures.

Liquid wastes from other BASF sites may be received for incineration at Palmyra. The site will use certificates of analysis provided by the waste source facility to determine regulated constituents in the feed and determine appropriate feedrates that assure compliance.

Process fumes will not be routinely analyzed. However, any new constituent analyses data may be reviewed and used to assure compliance. As with liquid wastes, a major change in a process that could change one or more regulated constituent concentrations in the fumes may result in additional analytical work or engineering evaluations to assure compliance.

### **10.0 Recordkeeping**

The plantsite online files mentioned previously, containing regulated waste constituent concentrations and data evaluations, are password protected and found in either of the following site directories:

H:\HMPLANT\EXCEL\WasteMetals\.

H:\INCINERS\HWC MACT Compliance\Feedstream Analysis Plan\

The files will be updated with new data, after internal review and resolution of any data anomalies (based on comparisons with historic values, operating scenarios, etc.). Superseded versions will be retained electronically or in hard copy form for five years.

## **BASF Corporation Hannibal (Palmyra) Plant**

### **Incineration Waste Feedstream Analysis Plan**

Analytical data or evaluations that determine regulated constituent concentrations in process fumes are available as supplemental information for the Feedstream Analysis Plan.

The current Feedstream Analysis Plan will be maintained as a password protected online file. Copies may be printed for reference. Superseded versions will be retained electronically or in hard copy form for five years.

A record of analytical reports, operator-prepared sample analysis forms, requests for sample re-analysis, justifications for re-analysis and rejection of problematic analytical data, chain of custody, and Certificates of Analysis for offsite-generated waste will be maintained for at least five years from date of creation. The most recent 2 years records will be maintained on plantsite. These records may exist in either hard copy form in the HWC MACT operating record or in the QC Lab, or electronic form.

The Ecology, Health, and Safety (EHS) Central Hub will coordinate updates to the FAP and communicate them to operating areas. Similarly, the Incineration/Utilities Department will notify the EHS of proposed changes to wastes or waste treatment procedures affecting the Feedstream Analysis Plan. This will be handled through such methods as the site Management of Change procedure.